

## CLAIMS

What is claimed is:

- 1 1. A method of communicating over a plurality of different target media,  
2 comprising:  
3 providing, for each of the plurality of different target busses, a plurality of  
4 communication element types, each communication element type being structured to  
5 represent a particular protocol layer a of the respective target communication medium.
- 1 2. A method as recited in claim 1,  
2 wherein instances of each communication element type can be created for  
3 exchanging data on the respective target medium.
- 1 3. A method as recited in claim 1, further comprising defining the plurality of  
2 communication element types responsive to exchanges allowed by the protocol of the  
3 respective target medium.
- 1 4. A method as recited in claim 1, further comprising:  
2 creating an instance of at least one of the plurality of communication element  
3 types; and  
4 processing the instance of the communication element type for exchanging  
5 information on the respective target medium.
- 1 5. A method as recited in claim 1, wherein the communication element type defines  
2 a structure for transmitting data over the target medium.
- 1 6. A method as recited in claim 1, wherein the communication element type defines  
2 a structure for receiving data over the target medium.
- 1 7. A method as recited in claim 1, wherein at least one communication element type  
2 is a message type that includes a portion for holding message data associated with  
3 instances of the respective message type.
- 1 8. A method as recited in claim 7, wherein the message data has a fixed length.

- 1     9.     A method as recited in claim 7, wherein the message data has a variable length.
- 1     10.    A method as recited in claim 1, wherein the communication element type has a  
2     fixed portion that is the same for all instances of the communication element type.
- 1     11.    A method as recited in claim 1, wherein any communication element type can be  
2     defined in terms of other communication element types.
- 1     12.    A method as recited in claim 1, wherein the plurality of communication element  
2     types includes at least one message type, and each instance of the message type includes  
3     a portion for prescribing timing.
- 1     13.    A method as recited in claim 12 wherein the timing includes a setting for  
2     specifying a pre-message gap.
- 1     14.    A method as recited in claim 12, wherein the timing includes a setting for  
2     specifying a pre-word gap.
- 1     15.    A method as recited in claim 12, wherein the timing includes a setting for  
2     specifying a begin message timeout.
- 1     16.    A method as recited in claim 12, wherein the timing includes a setting for  
2     specifying a trailing gap.
- 1     17.    A method of structuring communications over a communication medium having a  
2     known protocol, comprising:  
3         providing at least one user-definable communication element type for at least one  
4     layer of a generalized communication model,  
5         each communication element type having a user-definable structure that is  
6     adaptable for representing a corresponding layer of the protocol.
- 1     18.    A method as recited in claim 17, wherein specific instances of the communication  
2     element types can be created for representing transactions over the medium.
- 1     19.    A method of creating an interface with a communication medium having a  
2     protocol, comprising:

3           creating at least one user-definable communication element type for at least one  
4 layer of a generalized communication model,  
5           structuring each at least one user-definable communication element type to  
6 substantially represent the protocol of the medium at the respective layer of the  
7 generalized communication model; and  
8           saving the at least one user-definable communication element type in a computer  
9 readable format that can be accessed for communicating over the medium.